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Service Guide Version and Revision

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ACER AL1951 Service Manual

Printed in Taiwan.

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Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Remind you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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Warning: (For FCC Certified Models)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.

As an ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

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Precautions

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 3.5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.
- For use only with the attached power adapter (output 12V DC) which have UL, CSA listed license

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Special Notes On LCD Monitors

The following symptoms are normal with LCD monitor and do not indicate a problem.

Notes

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

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Chapter 1

Monitor Features

Introduction

Scope

This specification defines the requirements for the 19" MICRO-PROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15 pin D-sub VGA connector and 24 pin DVI connector. It also supports VESA DPMS power management and plug & play function. There is a build-in stereo audio amplifier with OSD control to drive a pair of speakers.

Description

The LCD monitor is designed with the latest LCD technology to provide a performance oriented product with no radiation. This will alleviate the growing health concerns. It is also a space saving design, allowing more desktop space, and comparing to the traditional CRT monitor, it consumes less power and gets less weight in addition MTBF target is 50k hours or more.

Chart of AL1951

Panel	19" SEC LTM190EX-L01
Signal Interface	D-SUB
	DVI
Sync Type	Separate / Compatible
Color Temp User Adjust	Support
DDC	DDC2B
Speaker	1.5W + 1.5W (Rated power)
Headphone Jack	3.5mm stereo phone jack, green color
Microphone Jack	No
USB Hub	Not support
Tilt / Swivel	Yes / No

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Electrical Requirements

Standard Test Conditions

All tests shall be performed under the following conditions, unless otherwise specified.

Ambient light	:	Dark room
Viewing distance	:	40 cm for LCD performance, 20 cm for LCD failures
Warm up time		
All specifications	:	30 minutes
Fully functional	:	5 seconds
Measuring equipment	:	Chroma 7120 signal generator or equivalent, directly Connected to the monitor under test. Minolta CA100 photometer, or equivalent
Control settings		
User brightness control	:	Set to Factory preset value (cut off raster)
User contrast control	:	T Set to factory preset value, which allows that the brightest two of 32 linear distributed gray-scales (0 700mv) can be distinguished.
User red/white balance, Green/white balance and Blue/white balance control	:	In the center (unless otherwise specified)
Power input	:	230V 5
Ambient temperature	:	20±5
Analog input mode	:	1280x1024, 60 Hz, all white

Measurement systems

The units of measure stated in this document are listed below:

1 gamma = 1 nano tesla
1 tesla = 10,000 gauss
cm = in x 2.54
lb = kg x 2.2
degrees F = [°C x 1.8] + 32
degrees C = [°F - 32]/1.8
u' = 4x/(-2x + 12y + 3)
v' = 9y/(-2x + 12y + 3)
x = (27u'/4)/[(9u'/2) - 12v' + 9]
y = (3v')/[(9u'/2) - 12v' + 9]
nits = cd/(m2) = Ft-L x 3.426
lux = foot-candle x 10.76

LCD Monitor General Specification

Panel type	:	19 " active matrix color TFT LCD
		SEC LTM190EX – L01
Display size	:	376.32mm (H) 301.056mm(V)
Display mode	:	Normally white
Pixel pitch	:	0.294mm(H) 0.294mm(V)
Display dot	:	1280 x (RGB) 1024
Pixel clock	:	135 MHz
Contrast ratio		700:1
Brightness	:	300 cd/m2
Response time (Tr/Tf)	:	8ms (Tr=2ms, Tf=6ms)
Display color	:	16.7M(RGB 8 bit Data)
Viewing angle	:	H:150 / V:135 (typ)
Pc interface	:	RGB Analog Interface
		Digital interface
Signal connector	:	D-Sub 15pin
		DVI-D 24pin
Interface frequency	:	Horizontal Frequency 30KHz ----83KHz
		Vertical Frequency 55Hz ------75Hz
Plug & play	:	VESA DDC2B, VESA DPMS
Power Input voltage	:	50 ± 3Hz, 60 ± 3Hz, 100 VAC to 240VAC
Total output power	:	45Watt max.

LCD Panel Specification

LCD Panel Model (SAMSUNG LTM190EX- L01)

- Display Type active matrix color TFT LCD
- Resolution 1280x1024 pixels
- Display Dot 1280x (RGB) x 1024
- Display Area 376.32mm(H) x 301.056mm(V)
- Pixel Pitch 0.294mm(H) x 0.294mm(V)
- Display Color 16.7M (true)
- Lamp Frequency 80kHz (Max)
- Lamp Current 8.0 mArms (Max)
- Weight 2250g (Max)
- Optical Specifications

IL = 6.5mArms Ta = 25 2 C VDD = 5V FV = 60Hz FDCLK = 54MHz

ITEM		Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Contrast Ratio (Center of screen)		C/R	θ=0, φ=0 Normal Viewing Angle	450	700	-	-
Response Time	Rising	Tr		-	1.7	3	msec
	Falling	TF		-	6.3	9	
Luminance of white (Center of screen)		YL		250	300	-	cd/m^2
Color Chromaticity (CIE 1931)	Red	RX		0.610	0.640	0.670	-
		RY		0.299	0.329	0.359	-
	Green	GX		0.270	0.300	0.330	-
		GY		0.570	0.600	0.630	-
	Blue	BX		0.120	0.150	0.180	-
		BY		0.030	0.060	0.090	-
	White	WX		0.283	0.313	0.343	-
		WY		0.299	0.329	0.359	-
Color Chromaticity (CIE 1976)	Red	Ru'		-	0.452	-	-
		Rv'		-	0.522		
	Green	Gu'			0.125	-	-
		Gv'		-	0.563		
	Blue	Bu'		-	0.175	-	-
		Bv'		-	0.158		
	White	Wu'		-	0.198	-	-
		Wv'		-	0.468		
Color Gray scale linearity	White	u'v'		-	0.018	-	-
Viewing Angle	Hori.	θL	CR 10	65	75	-	Degrees
		θR		65	75	-	
	Ver.	φH		65	75	-	
		φL		50	60	-	
Brightness Uniformity (9 Points)		BUNI	-	-	-	25	%
Cross Modulation		DSHA	-	-	-	2	%
Flicker		F	-	-	-	8	-

Supported Timing

VESA MODES							
			Horizontal		Vertical		
Mode	Resolution	Total	Nominal Frequency +/- 0.5kHz	Sync Polarity	Nominal Freq. +/- 1 Hz	Sync Polarity	Nominal Pixel Clock (MHz)
VGA	640x480@60Hz	800 x 525	31.469	N	59.940	N	25.175
	640x480@72Hz	832 x 520	37.861	N	72.809	N	31.500
	640x480@75Hz	840 x 500	37.500	N	75.00	N	31.500
SVGA	800x600@56Hz	1024 x 625	35.156	N/P	56.250	N/P	36.000
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40.000
	800x600@72Hz	1040 x 666	48.077	P	72.188	P	50.000
	800x600@75Hz	1056x625	46.875	P	75.000	P	49.500
XGA	1024x768@60Hz	1344x806	48.363	N	60.004	N	65.000
	1024x768@70Hz	1328x806	56.476	N	70.069	N	75.000
	1024x768@75Hz	1312x800	60.023	P	75.029	P	78.750
	1152x864@75Hz	1600X900	67.5khz	P	75	P	108.000
SXGA	1280x1024@60Hz	1688x1066	63.981	P	60.020	P	108.000
	1280x1024@75Hz	1688x1066	79.976	P	75.025	P	135.000

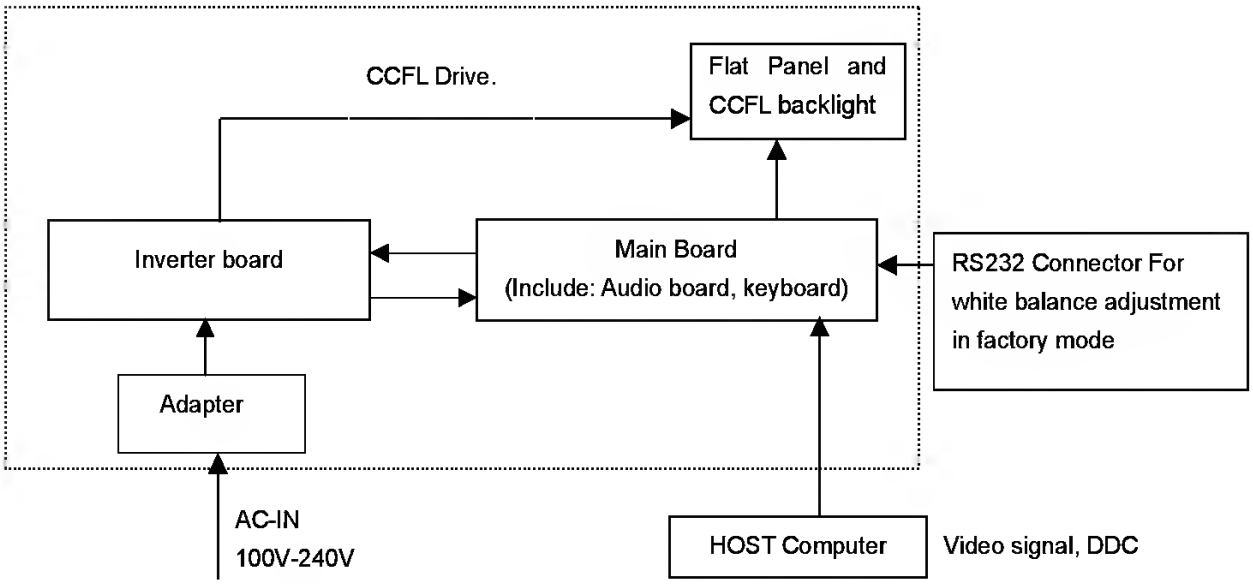
IBM MODES							
			Horizontal		Vertical		
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322
DOS	640x350@70Hz	800 x 449	31.469	P	70.087	N	25.175
XGA	1024x768@72Hz	1304 x 798	57.515	P	72.1	P	75.000

MAC MODES							
VGA	640x480@67Hz	864x525	35.000	N	66.667	N	30.240
SVGA	832x624@75Hz	1152x667	49.725	N	74.551	N	57.2832
XGA	1024x768@60Hz	1312x813	48.780	N	60.001	N	64.000
	1024x768@75Hz	1328x804	60.241	N	74.927	N	80.000

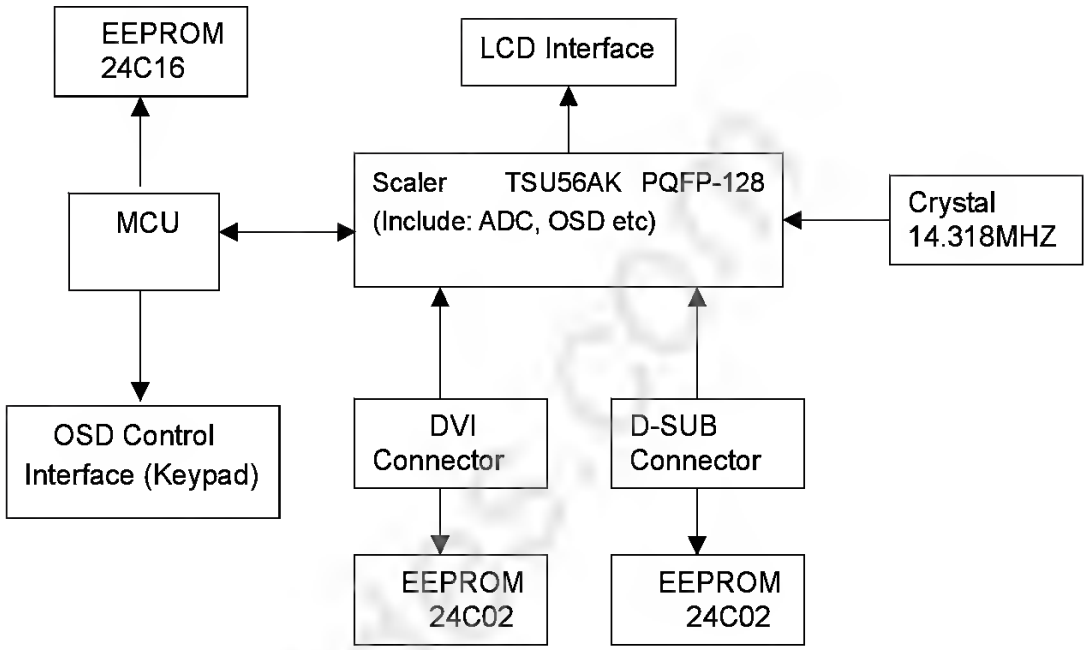
.

Monitor Block Diagram

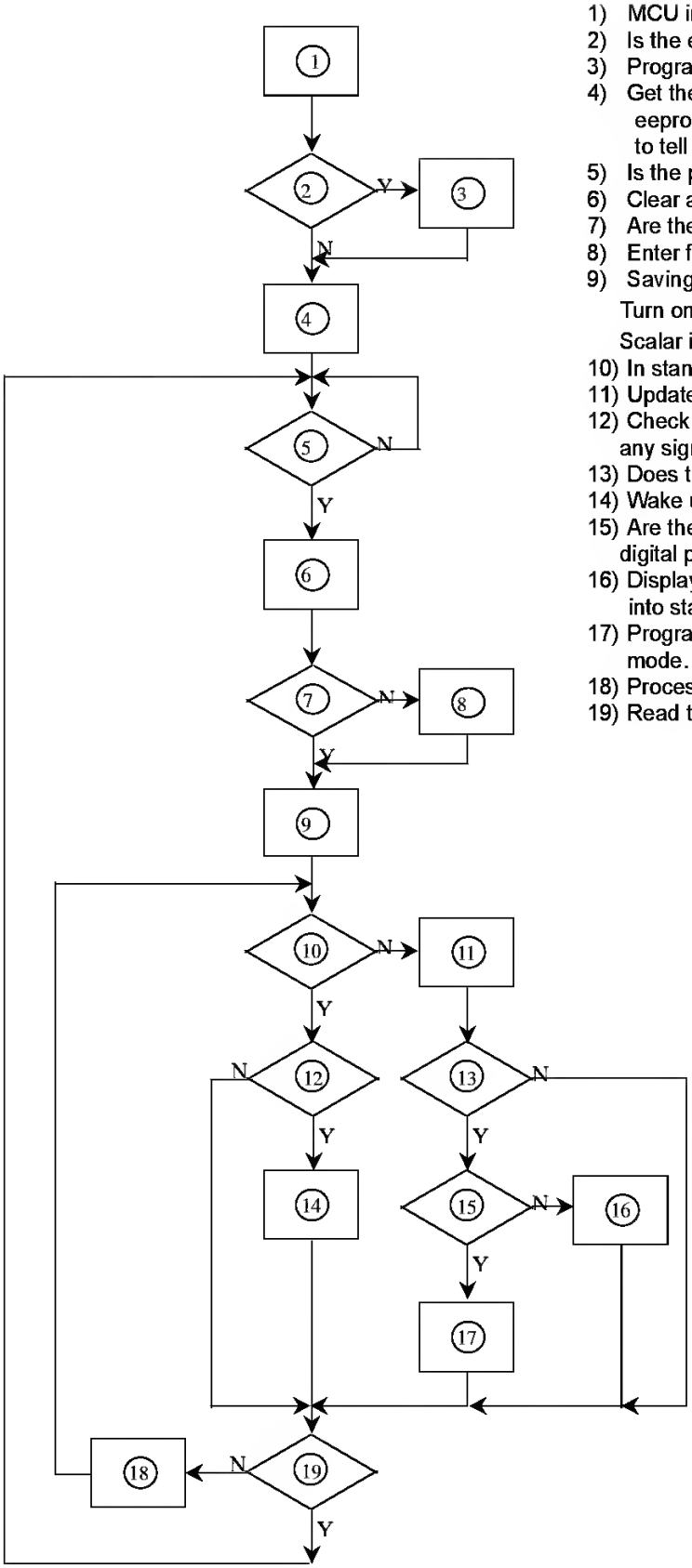
The LCD MONITOR will contain a main board (include: keypad board and audio board), an inverter board, adapter which house the flat panel control logic, brightness control logic and DDC.
The Inverter board will drive the backlight of panel.
The adapter will provide the 12V DC-power to inverter/power board and main board.



Main Board Diagram

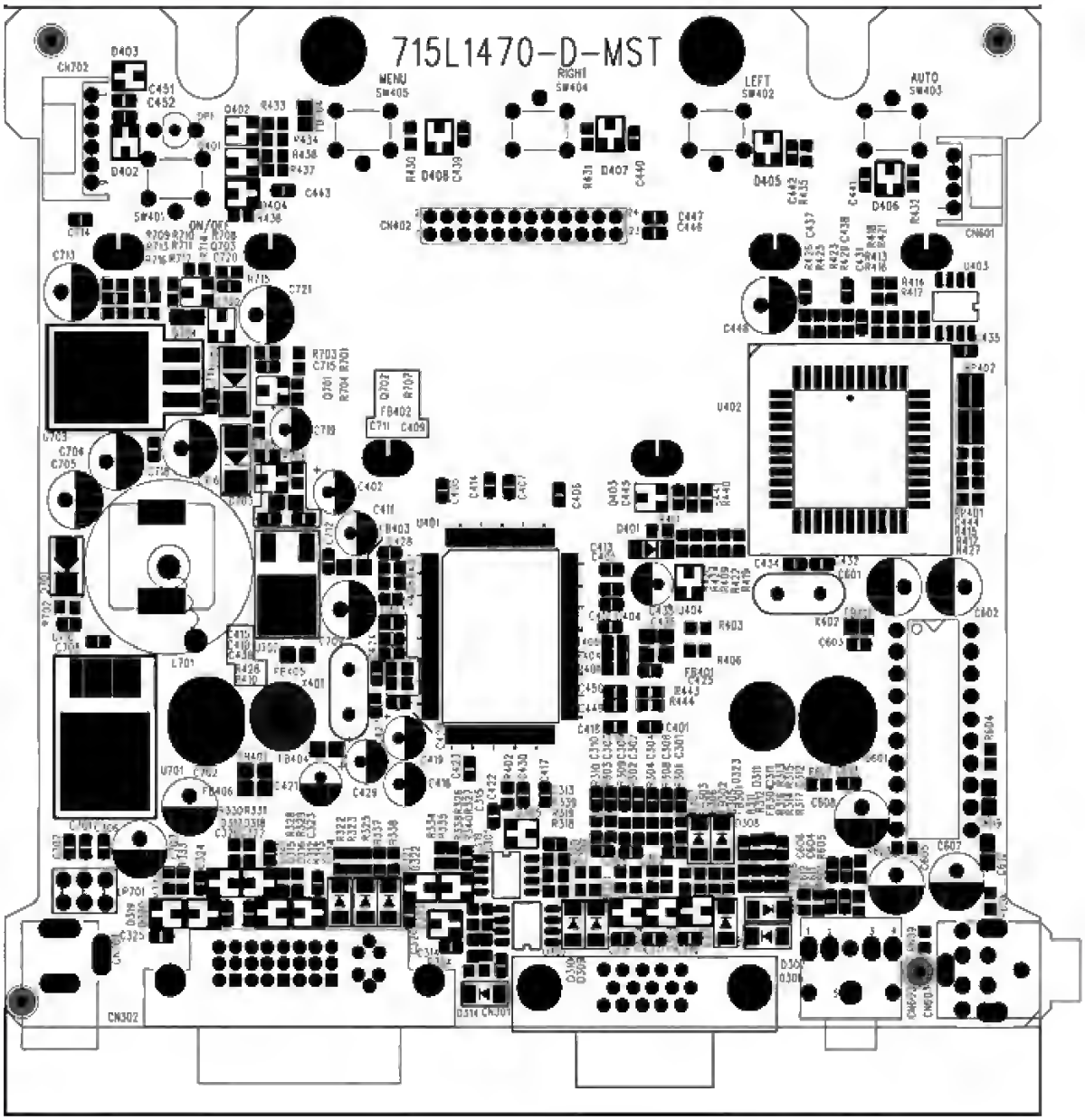


Software Flow Chart



1) MCU initialize.
2) Is the eeprom blank?
3) Program the eeprom by default values.
4) Get the PWM value of brightness from eeprom. Check the pin PANEL1 and PANEL2 to tell which panel to get with it.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Saving the power key status into eeprom.
   Turn on the LED and set it to green color.
   Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog and digital port, are there any signals coming?
13) Does the scalar send out a interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog or digital port?
16) Display " No Input Signal " message. And go into standby mode after the message disappear.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

Main Board Layout



Location	Part NO	Description
U301	56L1133 34	M24C02-WMN6T SMT
U302	56L1133 34	M24C02-WMN6T SMT
U401	56L 562 82	TSU56AK PQFP-128
U402	56L1125137SZB	W78E65-40P
U403	56L1133 24	AT24C16AN-10SI-2.7
U701	56L 563 11	SI-8050SD
U702	56L 563 31	AZ1117D-1.8
CN301	88L 35315F H	D-SUB 15PIN
CN302	88L 35424F H	DVID CONN. 24P FEMALE
CN402	33L801724A H	PIN HEADER 24P 2.0mm
CN601	33G3802 4H	WAFER 4P RIGHT ANGLE
CN602	88L 30214K	PHONE JACK
CN603	88L 30211K	PHONE JACK
CN701	88L 304 1C	power jack
CN702	33G3802 6H	WAFER 6P RIGHT ANGLE PI
U601	56L 616 1	TDA7496L BY ST
X401	93L 22 53	CRYSTAL 14.318MHzHC-49U
X402	93L 22 55 H	20MHZ

Front Bezel

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor (See Figure 3). By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card
- Press the power button to turn on the monitor position. The power indicator will light up.

Figure 3 External Control Button

EXTERNAL CONTROLS

1.	>/ Volume	4.	MENU/ENTER
2.	</ Volume	5.	Auto Adjust Key/Exit
3.	Power Key /Power Indicator		

FRONT PANEL CONTROL

- **Power Button:**
  Press this button to turn the monitor ON or OFF, And display the monitor's state.

- **Power Indicator:**
  Blue — Power On mode.
  Orange — Power off.

- **MENU / ENTER :**
  Activate OSD menu when OSD is OFF or activate/de-activate adjustment function when OSD is ON or Exit OSD menu when in Volume Adjust OSD status.

- **</Volume:**
  Activates the volume control when the OSD is OFF or navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

- **>/Volume:**
  Activates the volume control when the OSD is OFF or navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

- **Auto Adjust button / Exit:**

1. When OSD menu is in active status, this button will act as EXIT-KEY (EXIT OSD menu).
2. When OSD menu is in off status, press this button for 2 seconds to activate the Auto Adjustment function.
   The Auto Adjustment function is used to set the HPos, VPos, Clock and Focus.

NOTES

- Do not install the monitor in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

Rear Bezel

Turn off your computer before performing the procedure below.

1 Connect the power adapter dc cable to the DC-In port on the back of the monitor.

2. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.

3. (only Dual-Input Model)Connect one end of the 24-pin DVI cable to the back of the monitor and connect the other end to the computer's DVI port.

4. Connect the audio cable between the monitor's audio input and the PC's audio output (green port).

5. Plug the power cable of your monitor into a nearby outlet. Plug the other end of the power cord into the power adapter.

6. Turn on your monitor and computer.

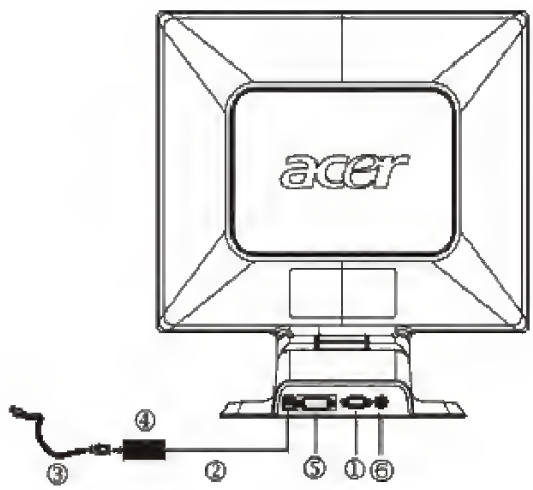


Figure 1 Connecting Cables

1.	D-SUB Cable	4.	External Adapter
2.	DC-Jack Power Cable	5.	DVI Cable
3.	AC Power Cord	6.	Audio cable

Adjusting the Picture

How to Adjust a Setting

1. Press the MENU-button to activate the OSD window.
2. Press < or > to select the desired function.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or > to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.

I. Analog-Only Model

II. Dual-Input Model, Analog Signal Input

III. Dual-Input Model, Digital Signal Input

The Description For Control Function

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description
		Contrast	Adjusts the contrast between the foreground and background of the screen image.
		Brightness	Adjusts the background brightness of the screen image.
		Focus	Adjusts picture Focus (available in Analog mode only).
		Clock	Adjusts picture Clock (available in Analog mode only).
		H. Position	Adjust picture Focus (available in Analog mode only).
		V. Position	Adjust picture Clock (available in Analog mode only).
	N/A	Warm	Set the color temperature to warm white.
	N/A	Cool	Set the color temperature to cool white.
	R	User /Red	Adjusts Red/Green/Blue intensity.
	G	User/Green	
	B	User/Blue	

	N/A	English	Multi-language selection.
	N/A	繁體中文	
	N/A	Deutsch	
	N/A	Français	
	N/A	Español	
	N/A	Italiano	
	N/A	简体中文	
	N/A	日本語	
		H. Position	Adjust the horizontal position of the OSD.
		V. Position	Adjust the vertical position of the OSD.
		OSD Timeout	Adjust the OSD timeout.
(only Analog-input Model)	N/A	Auto Config	Auto Adjust the H/V Position, Focus and Clock of picture.
(only Dual-Input Model)	N/A	Analog	Select input signal from analog (D-Sub)
	N/A	Digital	Select input signal from digital (DVI)
	N/A	Information	Show the resolution, H/V frequency and input port of current iput timing.
	N/A	Reset	Clear each old status of Auto-configuration and set the color temperature to Cool.
	N/A	Exit	Save user adjustment and OSD disappear.

Logo

When the monitor is power on, the LOGO will be showed in the center, and disappear slowly.

How To Optimize The DOS-Mode
Plug And Play
Plug & Play DDC1/2B Feature

This monitor is equipped with VESA DDC1/2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities. The communication channel is defined in two levels, DDC1 and DDC2B.

The DDC1 is a unidirectional data channel from the display to the host that continuously transmits EDID information. The DDC2B is a bidirectional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

This monitor will appear to be non-functional if there is no video input signal. In order for this monitor to operate properly, there must be a video input signal.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signal this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard or clicking the mouse.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volts AC.

Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

Please note that power supply cord needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

Chapter 2

Machine Disassembly

This chapter contains step-by-step procedures on how to assemble the monitor for maintenance.

Disassembly Procedure

1. Remove two screws to release back cover. (Fig 1).
2. Remove the base stand (Fig 2)

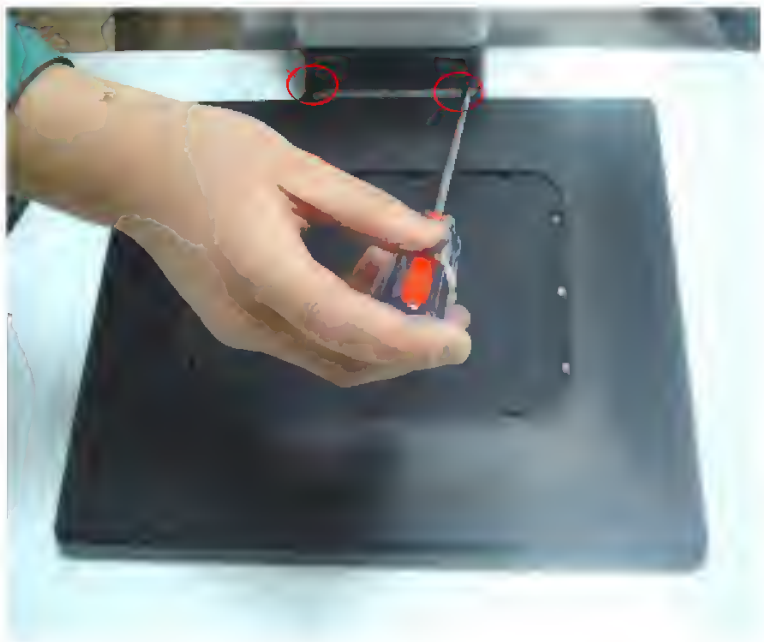


Fig 1

Fig2

3. Remove four screws to release front bezel. (Fig 3)
4. Remove the hinge cap. (Fig 4)

Fig 3

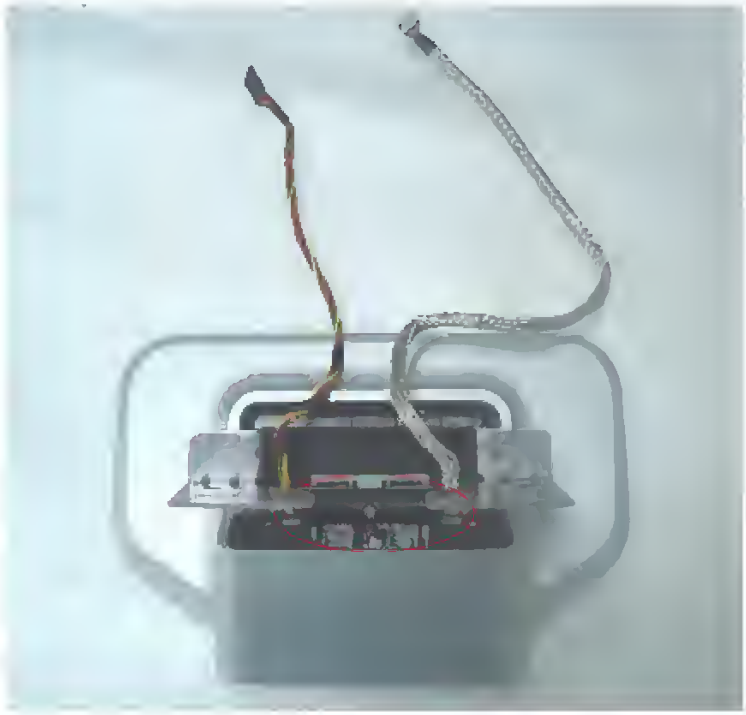


Fig 4

5. Remove eleven screws to release top cover and bottom cover. (Fig 5)
6. Remove the main board. (Fig 6)

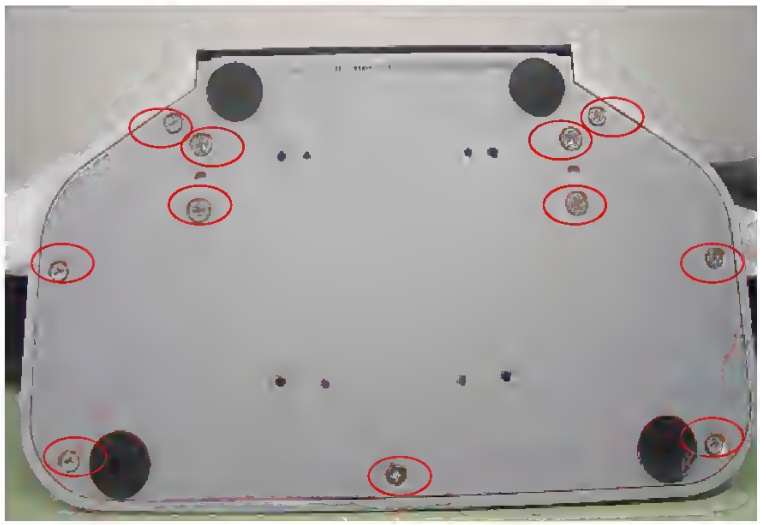


Fig 5

Fig 6

7.Remove six clamps to release shield and the main board. (Fig 7)
8.Remove the main frame. (Fig 8)
9.Remove the inverter board. (Fig 9)

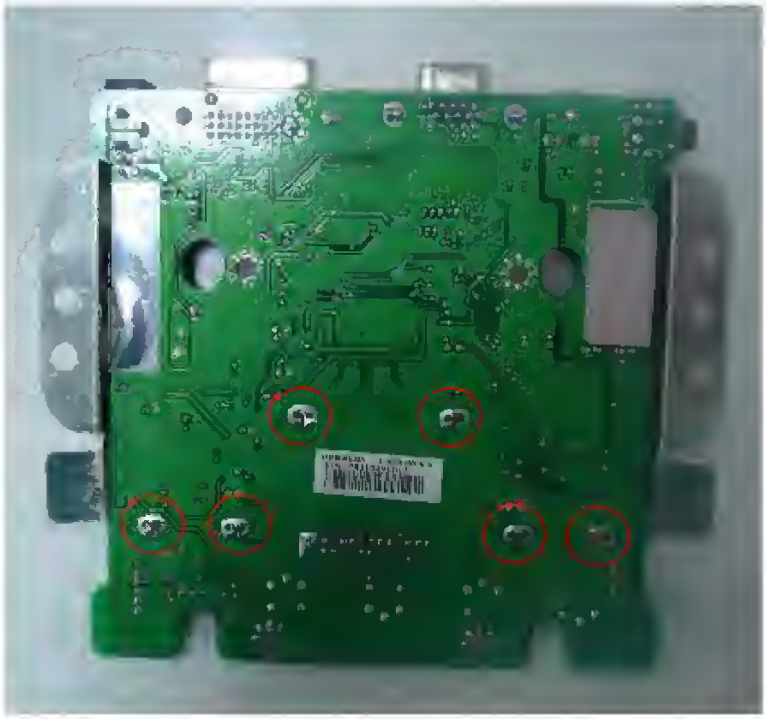


Fig 7

Fig 8

Fig 9

Chapter 3

Troubleshooting

This chapter provides troubleshooting information for the AL1951:

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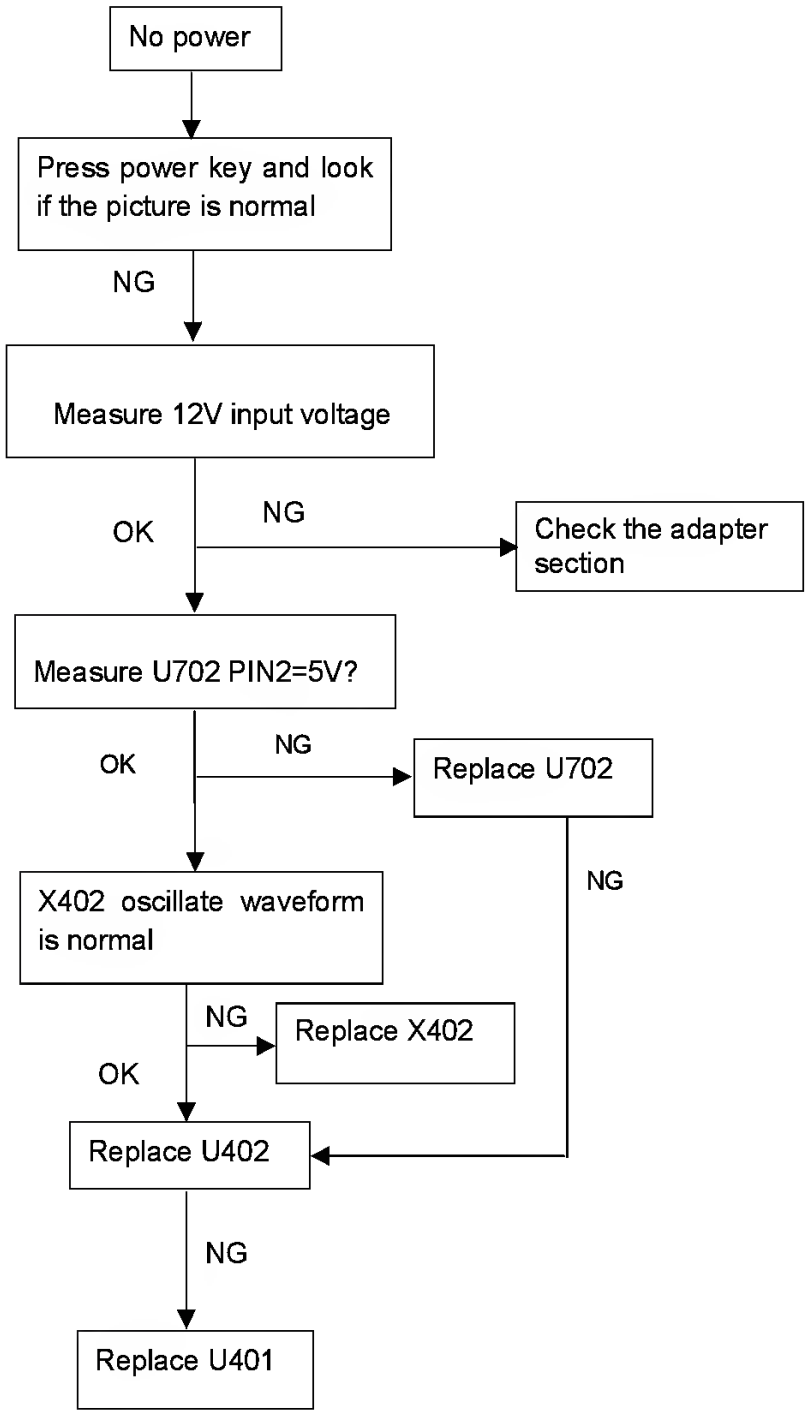
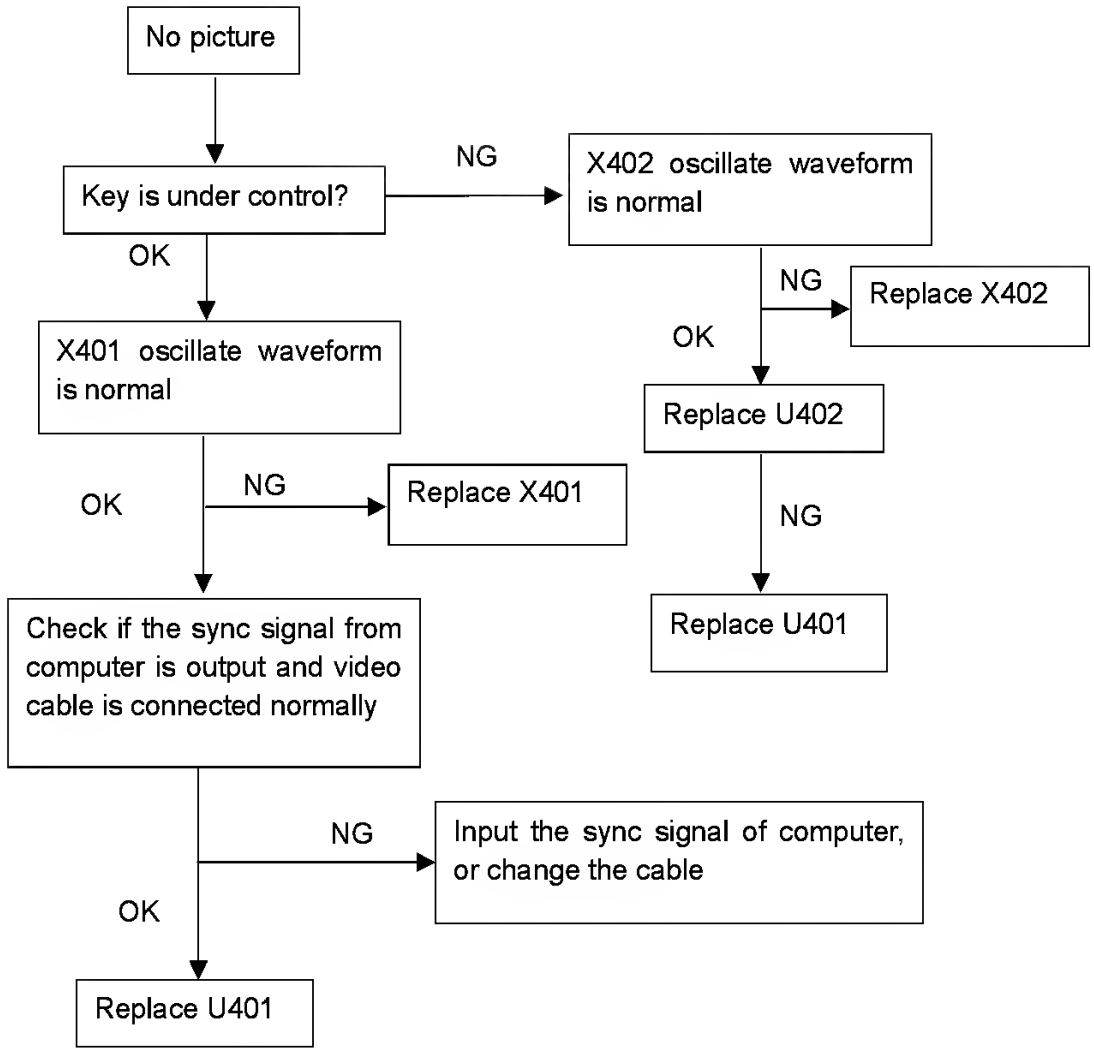
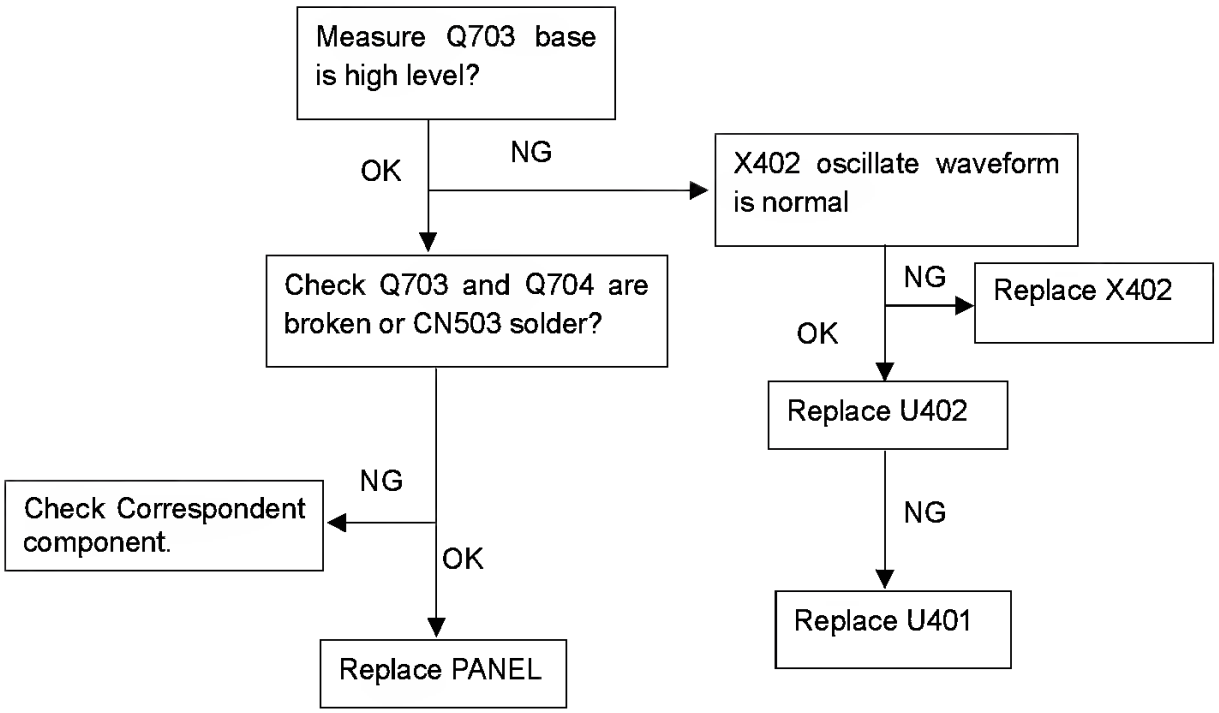


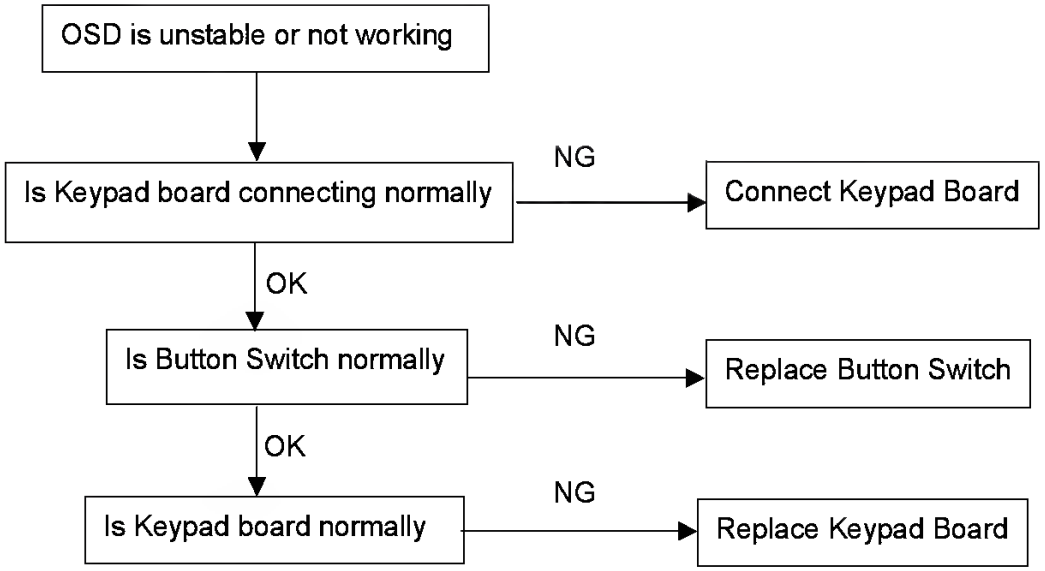
2. No picture (LED is orange)



3. Panel Power Circuit

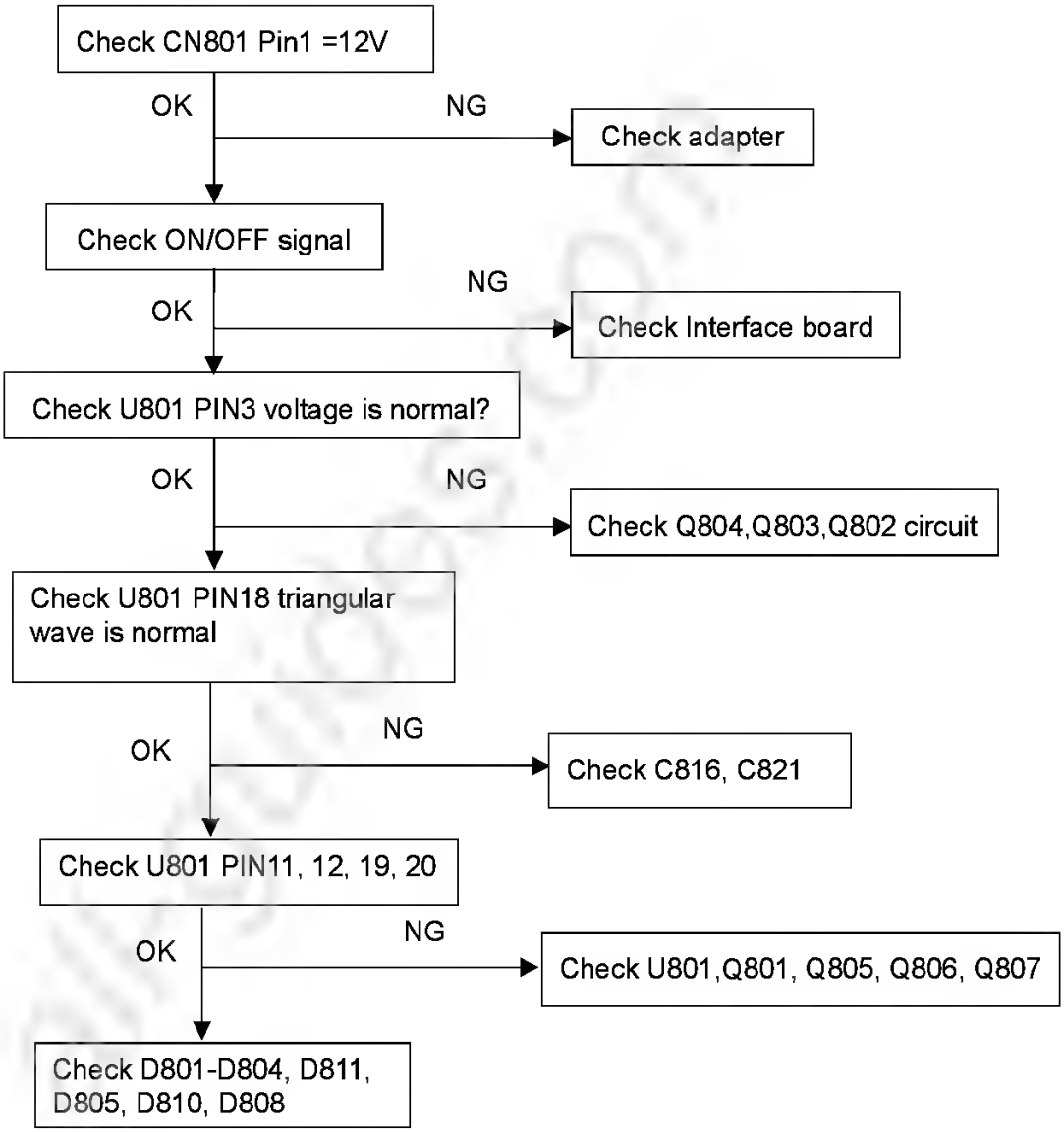


4. Keypad Board

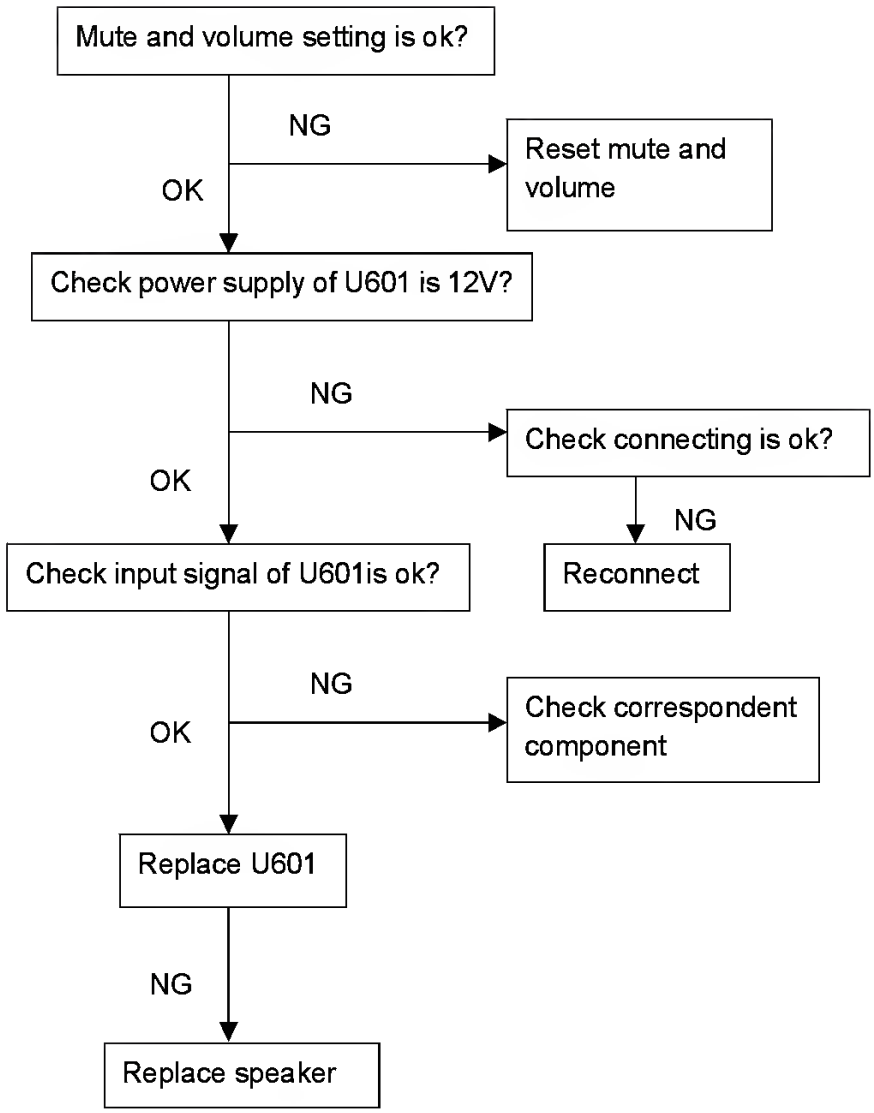


5. Inverter Board

No Backlight



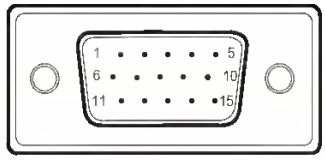
6.No Audio



Connector Information

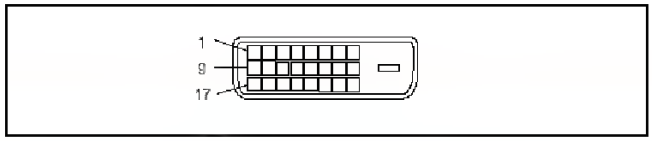
Chapter 4

The following figure shows the connector locations on the monitor board:



15 – Pin Color Display Signal Cable (D-sub)

PIN NO.	DESCRIPTION	PI N NO.	DESCRIPTION
1.	Red	9.	+5V
2.	Green	10.	Logic Ground
3.	Blue	11.	Monitor Ground
4.	Monitor Ground	12.	DDC-Serial Data
5.	DDC-Return	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		



24 – Pin Color Display Signal Cable (DVI)

PIN NO.	DESCRIPTION	PI N NO.	DESCRIPTION
1.	TMDS Data2-	13.	TMDS Data3+
2.	TMDS Data2+	14.	+5V Power
3.	TMDS Data 2/4 Shield	15.	Ground
4.	TMDS Data4-	16.	Hot Plug Detect
5.	TMDS Data4+	17.	TMDS Data0-
6.	DDC Clock	18.	TMDS Data0+
7.	DDC Data	19.	TMDS Data 0/5 Shield
8.	Analogue Vertical Sync	20.	TMDS Data5-
9.	TMDS Data1-	21.	TMDS Data5+
10.	TMDS Data1+	22.	DDC Clock Shield
11.	TMDS Data 1/3 Shield	23.	DDC Clock+
12.	TMDS Data3-	24.	DDC Clock-

Chapter 5

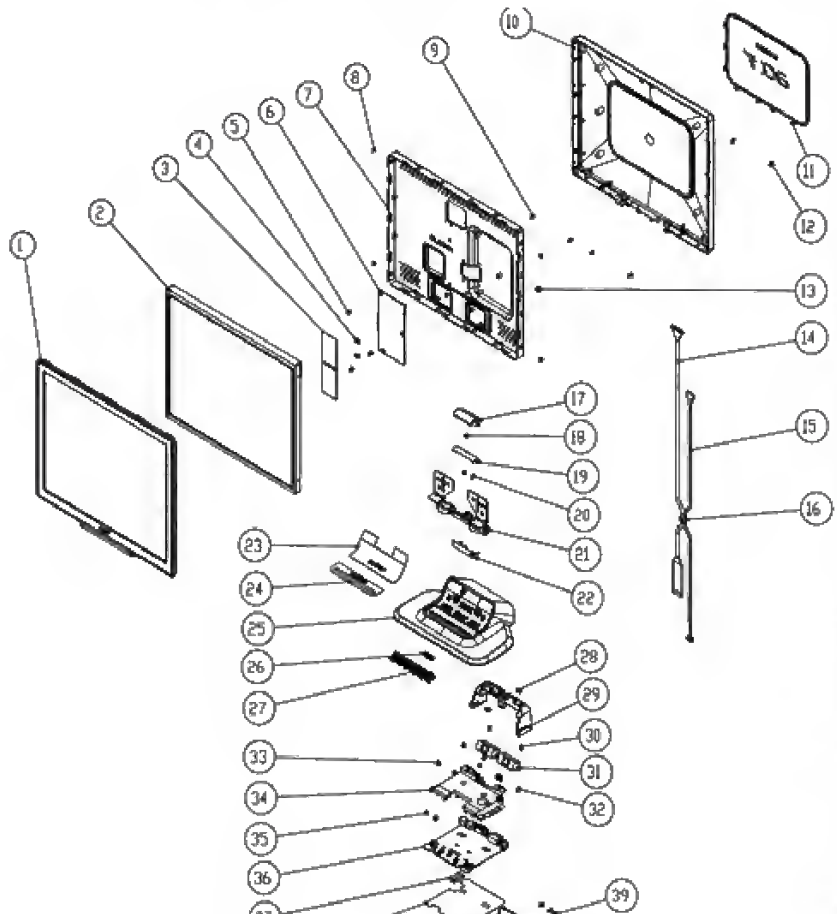
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of AL1951.Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel (http://aicsl.acer.com.tw/spl/). For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

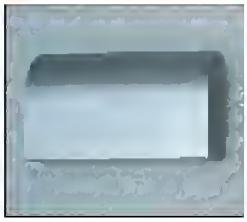
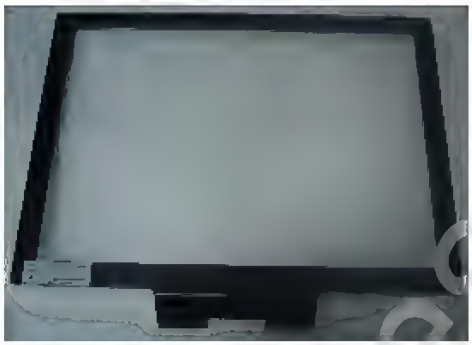
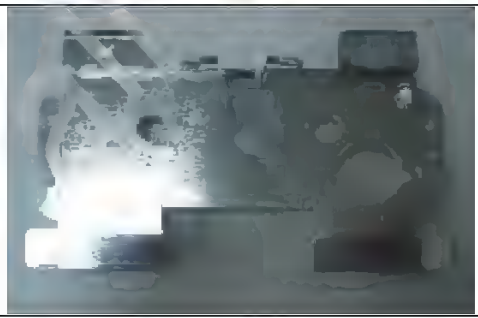
NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

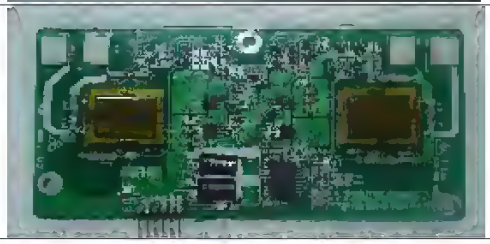
Exploded Diagram (Model: AL1951)



NO	P/N	PART NAME
1	34G1541-1	BEZEL
2		PANEL
3	52L602511818	MYLAR INVERTER
4	12G6078-1	PORON INVERTER
5	H1L17306128	SCREW
6		INVERTER PCB
7	15L6191-1	MAINFRAME
8	H1L1305120	SCREW
9	01L330847	SCREW
10	34G1542-1	REAR COVER
11	34G1540-1	BACK COVER
12	01L330847	SCREW
13	H1L17408120	SCREW
14		LVDS CABLE
15		INVERTER CABLE
16	50L500-510	CABLE TIES
17	33G4841-1	HINGE COVER UPPER
18	H1L17306128	SCREW
19	33G4843-1	HINGE CAP
20	01L1306120	SCREW
21	37L6030-2	HINGE
22	33G4842-1	HINGE COVER LOWER
23	36G802-1	SPEAKER NET
24	33L6280-1	KEY DECORATION
25	34G1537-1	BASE
26	33G4840-1	POWER BUTTON CAP
27	33G4839-1	KEY BUTTON
28	H1L1740101128	SCREW
29	20L6005-1	HINGE HOLDER
30	01L330847	SCREW
31		SPEAKER
32	H1L10306128	SCREW
33	H1L17306128	SCREW
34	85L6117-1	SHIELDING
35	H1L17306128	SCREW
36		SCALAR PCB
37	12L6051-6	SR600A
38	52L602511817	MYLAR SCALAR
39	2L6001-1	NUT SCREW
40	33G4844-1	BASE BACK COVER
41	15L6192-2	BASE PLATE
42	H1L1408120	SCREW
43	01L1306120	SCREW
44	12L394-3	FOOT PORON

Part List

Item	Picture	Description	Part No.
1		Hinge cover	33G4841 QT L 33G4843 QT L
2		Bezel	34G1541AQW B
3		Back cover	34G1542 QT B
4		SHIELDING	85L6117 1

5		MAIN FRAME	15L6191 1
6		Panel	750LLS90EX1
7		Power board	INPC1942SEA1
8		Main board	CBPC980KS2AY
9		Speakers	78G 322 3 L& 78G 322 3 R

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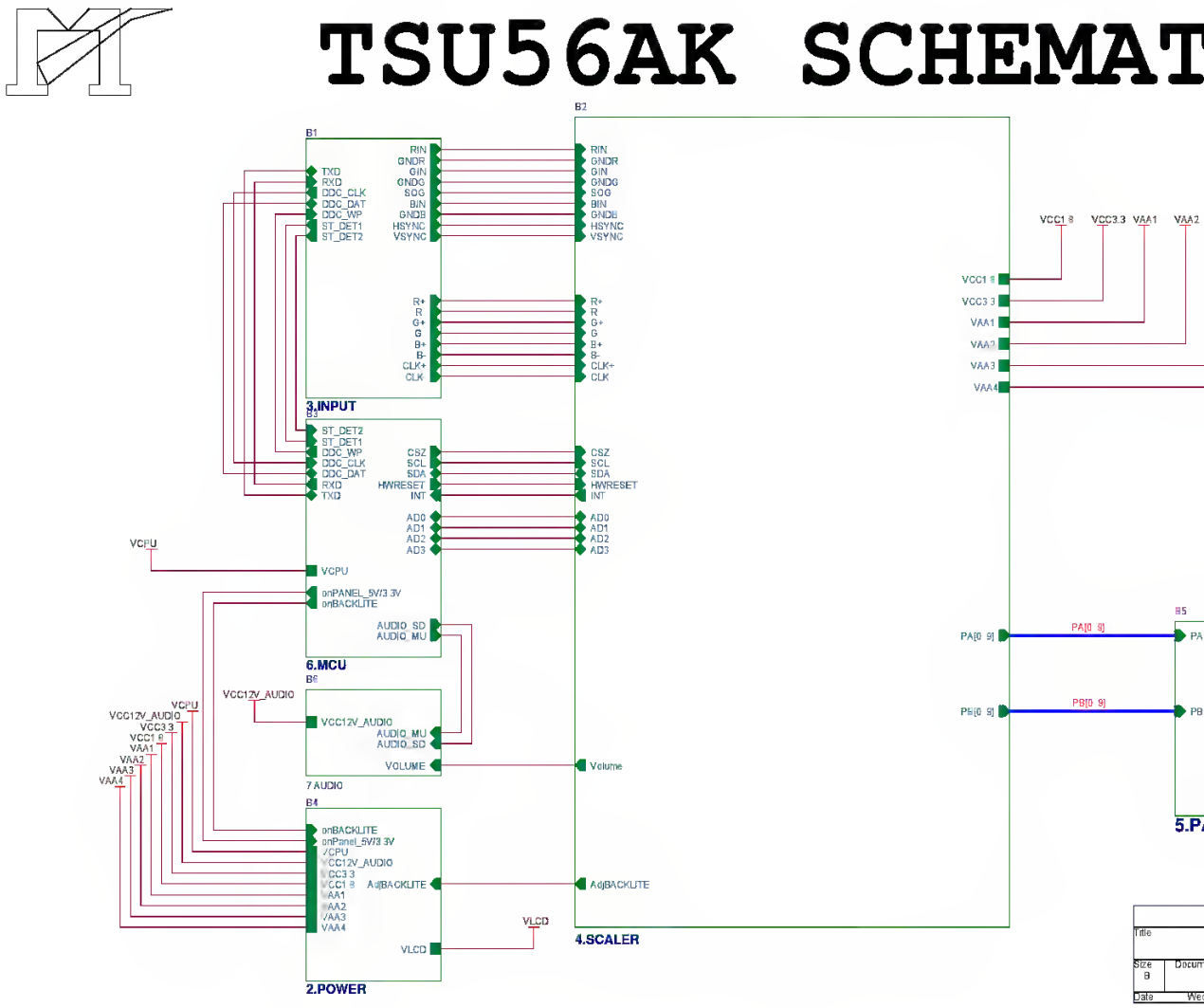
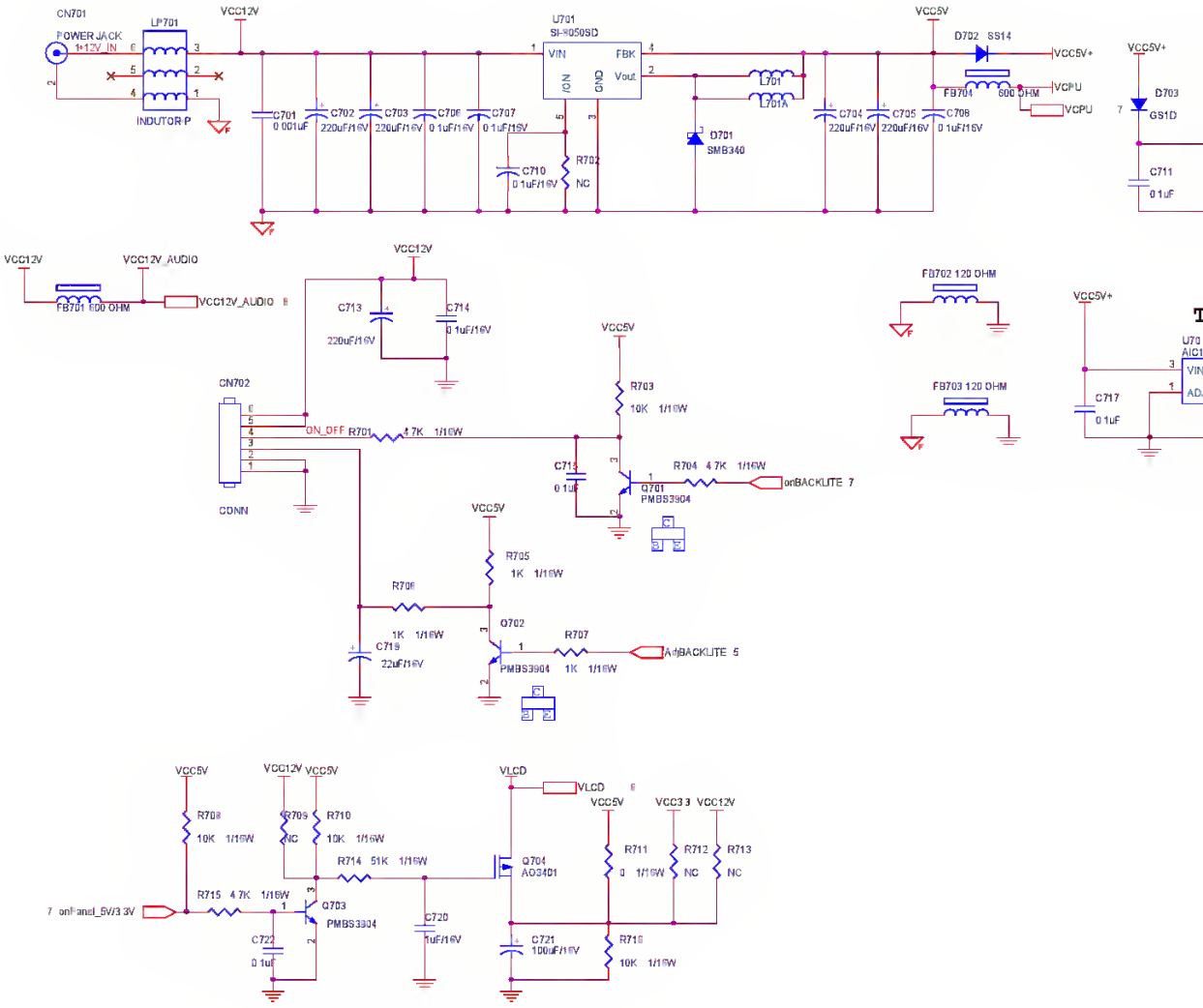
Schematic Diagram




CN701
POWER JACK
1=12V_IN
LP701
INDUTOR-P
VCC12V
U701
SI-8050SD
VIN
FBK
ION
GND
Vout
VCC5V
D702 SS14
VCC5V+
FB704 600 OHM
VCPU
D703
GS1D
C701 0.001uF
C702 220uF/16V
C703 220uF/16V
C706 0.1uF/16V
C707 0.1uF/16V
C710 0.1uF/16V
R702 NC
L701
L701A
D701 SMB340
C704 220uF/16V
C705 220uF/16V
C708 0.1uF/16V
C711 0.1uF
VCC12V_AUDIO
FB701 100 OHM
C713 220uF/16V
C714 0.1uF/16V
FB702 120 OHM
FB703 120 OHM
C717 0.1uF
CN702
CONN
ON_OFF
R701 4.7K 1/16W
R703 10K 1/16W
C715 0.1uF
Q701 PMBS3904
R704 4.7K 1/16W
onBACKLITE 7
R705 1K 1/16W
R706 1K 1/16W
C719 22uF/16V
Q702 PMBS3904
R707 1K 1/16W
AdjBACKLITE 5
R708 10K 1/16W
R709 NC
R710 10K 1/16W
R714 51K 1/16W
R715 4.7K 1/16W
onPanel_5V/3.3V 7
Q703 PMBS3904
C722 0.1uF
C720 1uF/16V
VLCD
Q704 AO3401
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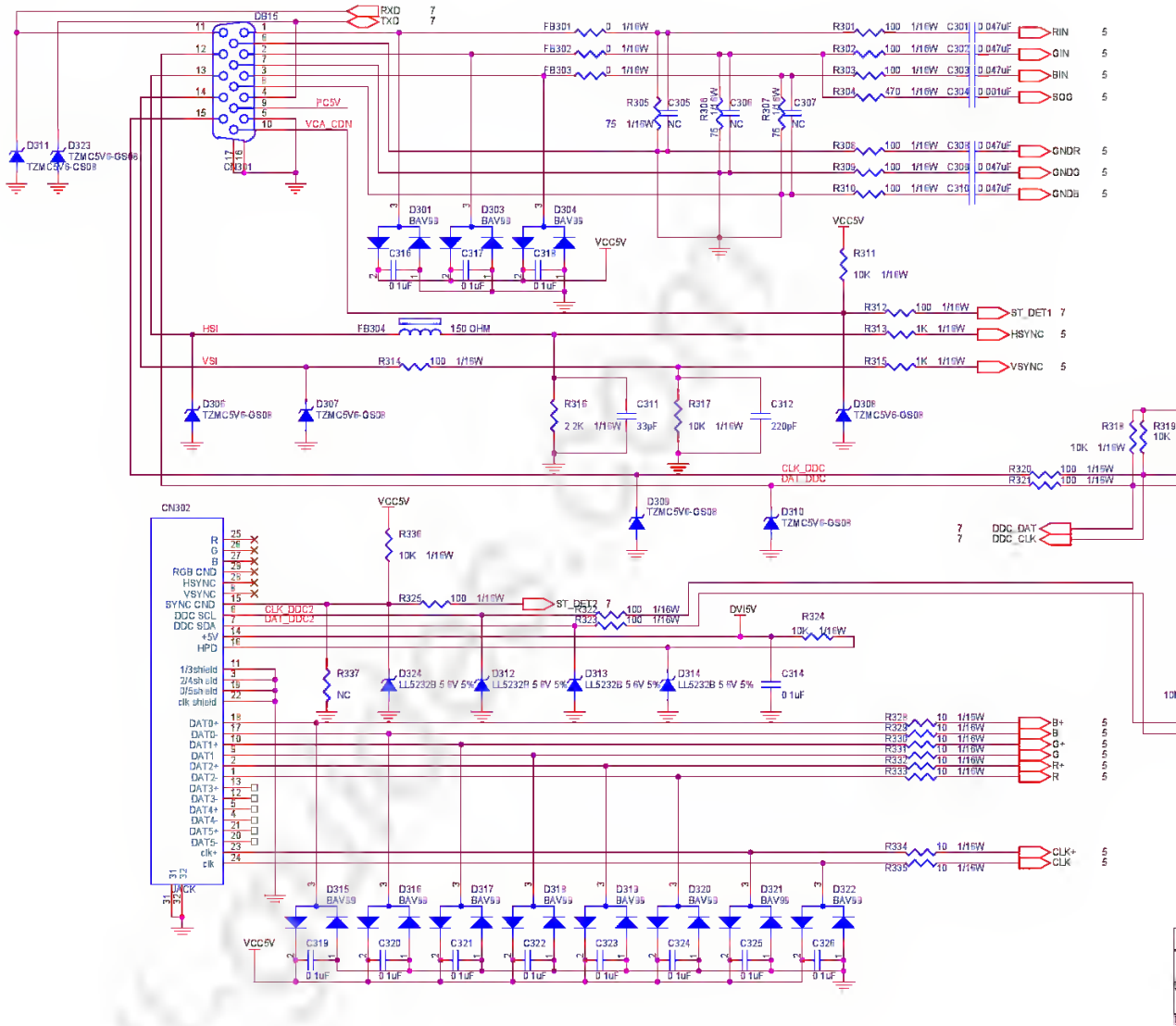
R712 NC
R713 NC
C721 100uF/16V
R716 10K 1/16W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TXD
PC5V
VGA_CDN
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D311
D323
TZMC5V6-GS08
FB301
FB302
FB303
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R303
R304
C301
C302
C303
C304
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GIN
BIN
SOG
R305
R306
R307
C305
C306
C307
R308
R309
R310
C308
C309
C310
GNDR
GNDG
GNDB
D301
D303
D304
BAV99
BAV95
C316
C317
C318
VCC5V
R311
R312
R313
R315
ST_DET1
HSYNC
VSYNC
HSI
VSI
FB304
150 OHM
R314
D306
D307
D308
R316
C311
R317
C312
R318
R319
R320
R321
CLK_DDC
DAT_DDC
DDC_DAT
DDC_CLK
D309
D310
CN302
R
G
B
RGB GND
HSYNC
VSYNC
SYNC GND
DDC SCL
DDC SDA
+5V
HPD
1/3shield
2/4sh ild
clk shield
DAT0+
DAT0-
DAT1+
DAT1
DAT2+
DAT2-
DAT3+
DAT3-
DAT4+
DAT4-
DAT5+
DAT5-
clk+
clk
DACK
R335
R325
R322
R323
R324
DVI5V
R337
D324
D312
D313
D314
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C314
R328
R329
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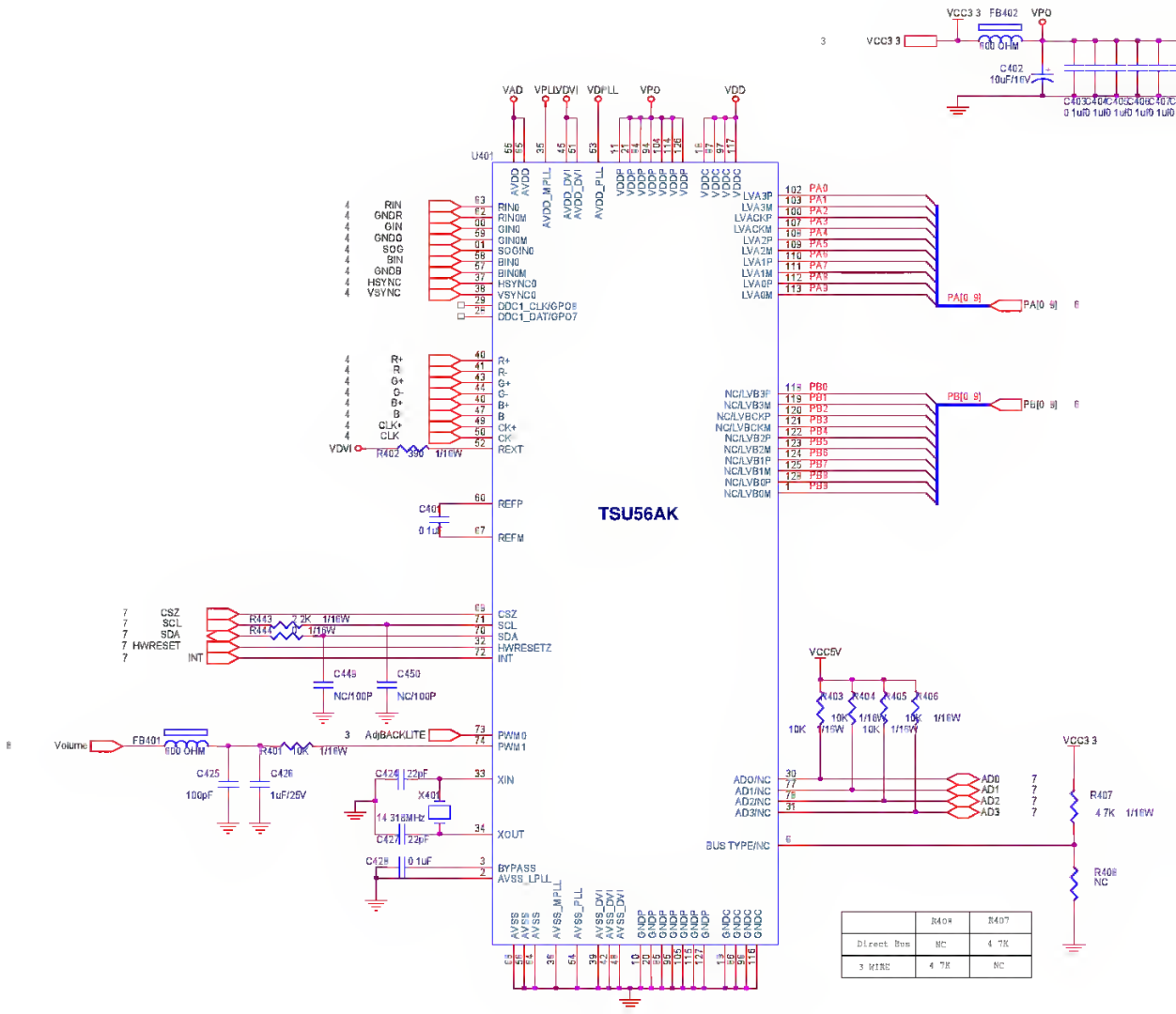
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U401
VAD
VPLLVDVI
VDPLL
VPO
VDD
VCC3 3
FB402
600 OHM
C402
10uF/16V
RIN
GNDR
GIN
GNDG
SOG
BIN
GNDB
HSYNC
VSYNC
DDC1_CLK/GPO8
DDC1_DAT/GPO7
R+
R-
G+
G-
B+
B-
CLK+
CLK-
VDVI
R402 330 1/16W
REFP
REFM
C401
0.1uF
CSZ
SCL
SDA
HWRESET
INT
R443 2.2K 1/16W
R444 1/16W
C448
C450
NC/100P
Volume
FB401
600 OHM
AdjBACKLITE
PWM0
PWM1
R401 10K 1/16W
C425
10pF
C426
1uF/25V
C424 22pF
X401
14.318MHz
C427 22pF
XIN
XOUT
C428 0.1uF
BYPASS
AVSS_LPLL
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
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PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PB8
PB9
PB[0..9]
VCC5V
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R404 10K 1/16W
R405 10K 1/16W
R406 10K 1/16W
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AD1/NC
AD2/NC
AD3/NC
AD0
AD1
AD2
AD3
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R408
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Direct Bus
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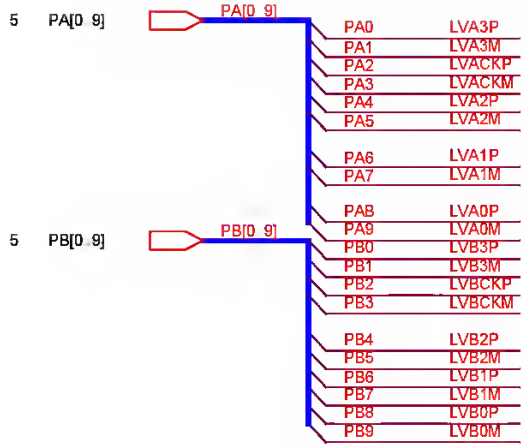
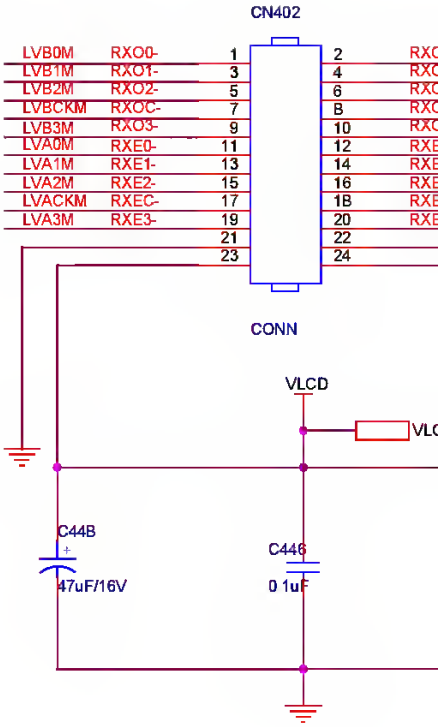
3 WIRE
4.7K
NC





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Size A	Document Number P
Date	Wednesday, Jan

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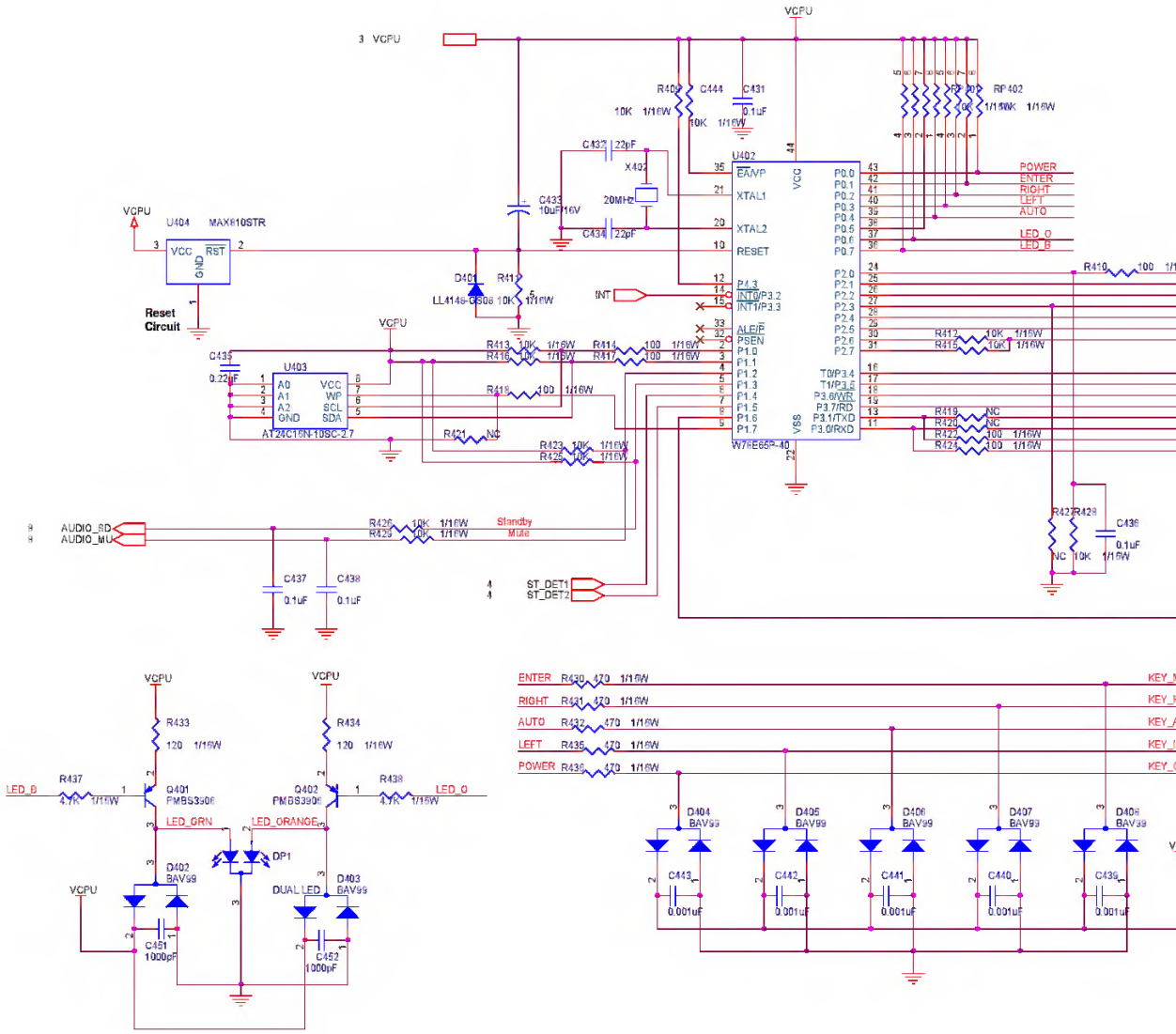

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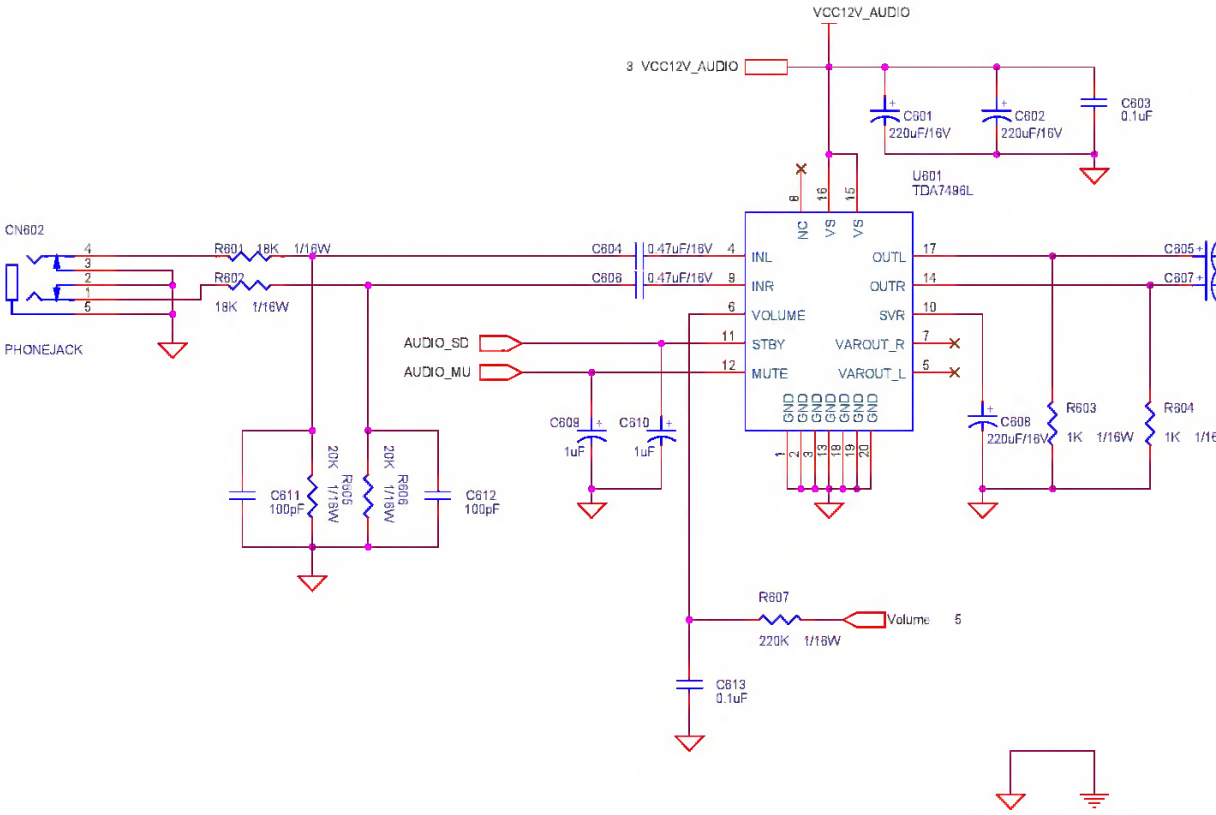

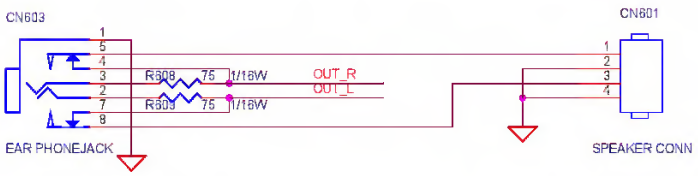

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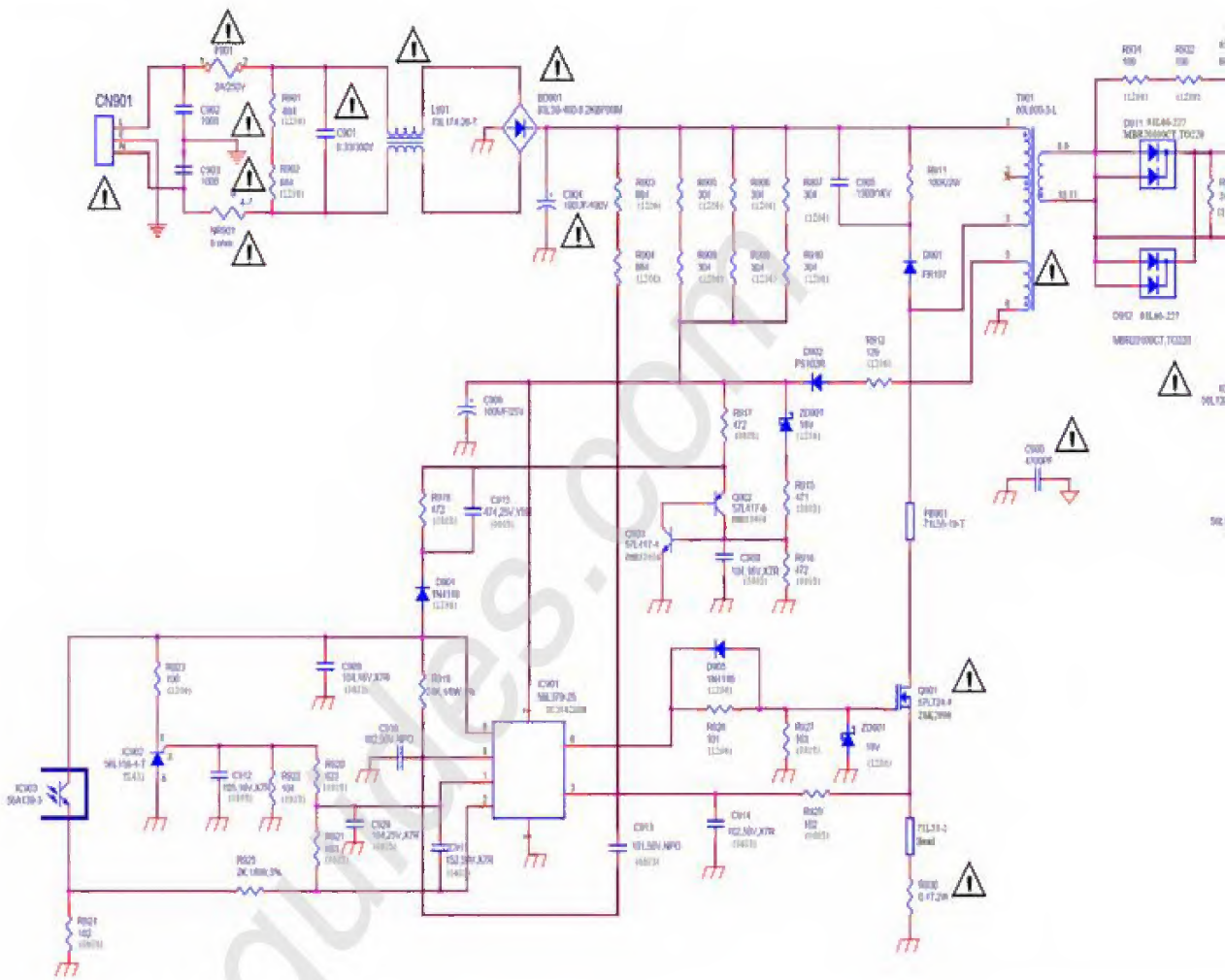
Adapter Board



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Inverter Board